

ABSTRACT OF THE DISCLOSURE

The present invention provides a highly efficient fuel cell power supply unit, which is constructed by directly connecting a fuel cell with a capacitor. In this power supply unit, a control device of the unit calculates the output voltage V_2 of the fuel cell after the variation of electrical load based on the synthetic current-voltage characteristics of the fuel cell and the capacitor and the predetermined width of the variation of electrical load ΔI , calculates the corresponding current I_{fc_2}' , and then calculates the equilibrium reacting gas supply amount Q_{a_1} , and supplies an excess amount of the reacting gas exceeding Q_{a_1} before the variation of electrical load.

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